

Summary of Prior Public Use Interplak Toothbrush Models Travel Switch

As discussed below, the Interplak Model PB-4B has a travel protection switch formed by a metal prong and a recess; the metal prong is on the handle, and the corresponding shape-fitting recess is on the brushhead. In another embodiment, Interplak handle Model PB-6 has a travel protection switch which is an electrode located under the plastic of the handle mount and there is a cooperating lock on the handle which is manually button-actuated to release it from the recess of the brushhead (the same brushhead is used on both models).

1. Bausch & Lomb Interplak Handle Model PB-4B style

The identified Bausch & Lomb (circa 1992) "Interplak" handpiece and toothbrush with travel protection switch is believed to be prior art to the present application. The undersigned counsel first became aware of this product on Saturday, April 28, 2001 where during a business trip while visiting his family he observed this product in possession of a family member, who stated that upon recollection the family member had purchased it circa 1992 in the United States.¹ Upon return to his office, he became aware of similar samples which were located at Applicants' place of business.² On information and belief, these handpiece and toothbrush specimens are believed to have been on sale in the U.S. prior to Applicants' filing date.

The metal electrode must be located on the handpiece portion (and not in the brushhead portion) in order to function as a travel protection switch. This electrode must be made of metal in order to complete the electric circuit. A copy of the box rear panel to the Model PB-4B is included which shows in see-through diagrammatic view that the electrode which forms the travel protection switch has a wire contact from the On/Off switch soldered to it (near where the word "ON" appears) and at a region deeper inside the handle this electrode makes further electrical contact with other parts of the circuit, so it is made of metal to be electrically conductive. For the sake of completeness, a copy of the corresponding use instructions (©1991) is included.³

Photographs and package display panels of the commercial product are attached, since no patent document describing this travel protection switch is known, it being deemed impractical to file with the Office a physical specimen in Applicants' possession. While Applicants' undersigned comments thereon as follows, he proposes that if Examiner wishes to inspect a physical specimen, he telephone the undersigned who would then fly with it from Germany to Washington, D.C. for a formal interview.

The drive shaft moves axially in and out of the handpiece. The toothbrush attachment has a rack-and-pinion drive which causes each stationarily-located bristle set to rotate about its own central axis, as described in U.S. Pat. 4,156,620 (Clemens) which is marked on the unit's re-

¹ The charging base is stamped "Bausch & Lomb Oral Care Division, Inc., made in Hong Kong" and gives a toll-free telephone number (1-800-334-4031); a recorded message at that number identified it as a consumer information line, and the woman answering the call informed the undersigned that the handpiece stamp "ID IA" identified it as having been manufactured in December, 1991.

² These are the following: (1) travel-size Bausch & Lomb Voyager Model TK-2 (© 1991 packaging; having same mount on handle as above, but a more compact battery compartment); and (2) the Dental Research Corp. Interplak Model GPB-2 (© 1987 German-language packaging for European market) from a predecessor manufacturer of the Bausch & Lomb Interplak (same handle as above). These are not separately submitted since they are cumulative with the above-described model PB-4B.

³ Instructions of the functionally identical B & L Interplak travel size version Model TK2 "Voyager".

charging base unit and thus also made of record herewith,⁴ and in U.S. Pat. 4,827,550 (Graham), also made of record. Inspection of the brushhead during mounting through the two rinsing slits on the back shows the internal rack portion of the brushhead's internal driven axial shaft is coupled to the handpiece's in/out axial shaft by a collet as described in Graham '550 (see collet 180 at Figs. 3-4 and col. 8, ln. 27-48). These patent documents do not otherwise appear relevant hereto.

The overall shape of the handpiece's neck region and the brushhead's handpiece-receiving chamber is illustrated in the Graham '550 reference. Differing from Figures 1-2 in Graham '550, the commercial product does not have the piece-part indicated by screw (25) on the handle and slot (103) on the brushhead. In the region approximately corresponding to the position of screw (25), the commercial product has a mechanical travel protection switch similar to a prong and recess arrangement. On the handle, the end of the metal switch protrudes through an aperture in the handle (see attached Fig. 2-3). The nose of the switch is outwardly convex and approximately V-shaped. With the brushhead mounted, the metal piece's nose is received in a correspondingly shaped notch-like formation inside of the brushhead chamber (see attached Figs. 6-7).

The travel protection switch has a metal piece on the handpiece which forms one electrode of a contact switch. In a first position of the metal piece (brushhead not mounted on the handle), the round, button-like ON/OFF switch⁵ on the handpiece is inoperable to energize the handpiece, so the axial shaft does not move in and out. With a fingertip one can move the metal electrode inwards (simulating the brushhead's mounted condition), causing an electric circuit to become complete and the shaft to move in and out. Thus, if the handpiece were packed into luggage without the brushhead, jostling would generally not turn the unit on and drain the batteries. With the brushhead mounted, the metal switch piece is moved to a second position relative its first position and the switch circuit is completed and the toothbrush can be operated.

2. Sealed switch version: the Bausch & Lomb Interplak Model PB-6

For the sake of completeness, photographs and a photocopy of the package rear panel are also submitted showing the Model PB-6 handle whose travel protection switch is configured slightly differently than the above, but which uses the brushhead attachment shown above.⁶ At a forward region of the housing there are two metal wire electrodes underneath the clear housing region which is pushed into electrical contact when the brushhead is attached. Cooperating with the travel protection circuit switch there is an oblong button which is manually operated to retract a plastic lock which is located closer to the handle grip and which locates into the same above-mentioned recess in the brushhead bottom end. The lock is located behind two rigid, outwardly-shaped bumps (Fig. 10) which are spaced parallel about the same width as the inclined plane on the front of the above PB-4B (see Fig. 3), the width corresponding to two slots on the brush attachment (Fig. 7). The package rear panel states that to release the brushhead, the user pushes the oblong release button, which retracts the lock. Photographs showing the lock in its unretracted and in retracted state (with a finger pushing the lock release button) are included, see Figs. 10-11.

⁴ The re-charging base is erroneously marked "Canada Pat. No. 108408"; a search in the Canadian patents database in the name of Clemens located the patent number 1082408, a family member of the Clemens U.S. Patent '620. The middle "2" was left out of the number stamped on the product.

⁵ The button switch also selects from three speeds indicated "1-2-3".

⁶ The package box is marked © 1992, likewise believed to have been on prior sale in the United States.

Other Foreign Patent Documents:

The author certificate of the USSR No. 749380 is in Russian, and as presently understood by the undersigned, discloses an electrical toothbrush that contains the brush head-nozzle 2, mounted on the housing 1. In the housing 1 the drive of the head 2 and the switch connected with the drive is located. The drive of the head consists of an accumulator 3 and engine 4 with an eccentric-vibrator. The switch contains a member 6 with a projection 7, arranged in a socket 5. The socket 5 has a segment with a conductive layer, connected by means of wire with one of outputs of the engine 4. The member 6 is connected to a pole of an accumulator 3, its second pole is connected to other output of the engine. The electrical toothbrush has the plug-support 13, which serves for boost charge of the accumulator 3. The brush is intended predominantly for the invalids with a restricted function of the lower extremities. While utilizing the user catches the housing of the brush, removing it thereby from a surface (for example, from a surface of desktop). Thus the member 6 under its own weight leaves the socket 5, and as a result a contact between the projection 7 and the conductive layer of the socket 5 is closing. The circuit "accumulator-engine" is closing, and the brush head 2 starts to vibrate. To stop operating of the brush it is enough to place it on any surface. Thus the member 6 will enter the socket 5 and there will be a disconnection of a circuit "accumulator-engine".

The author certificate of the USSR No. 1542539 is in Russian, and as presently understood by the undersigned discloses a device for processing of surfaces. The device contains a housing in form of handle 1, in which the threaded socket 32 is located. The socket 32 serves for installation in it of changeable operating units, including a saw for nails 4 or a toothbrush 42. Inside the housing a drive of is arranged. The drive has a means for its rotating motion conversion to oscillating motion of the operating units. The means for conversion has the main eccentric 28 and additional eccentric 29, which axis is biased concerning an axis of the main eccentric. In the device there is a control unit 34 for controlling of oscillating motions of the operating unit. At rotation of a gear 27 the eccentric 28, fixed on a gear 27 and arranged in the frame 27 is rotating. Thus the bilateral oscillating motions intercommunicate to a frame 27. In turn these motions are transmitted to a shaft 31 and the operating units, fixed on it, (for example, toothbrush).

The author certificate of the USSR No. 1674789 is in Russian, and as presently understood by the undersigned, discloses the electromechanical toothbrush having a housing 1 in which there is a drive. The drive contains an electric motor 2, power units 3 and 4 and a three-position switch 7. The shaft of the electric motor 2 is connected to a jackshaft 13, which is

connected removable to the brush head 15. The head 15 has a protective case 16, connected non-removable to the head. In the housing 1 the container 24 is located, which serves for storage and supply of toothpaste on the head 15. For getting the head 15 in rotation the switch 7 is to be put in one of end positions. Thus the voltage is feeding on contacts of the electric motor from power units 3 and 4, that provides rotation of the head 15. While getting the switch 7 in other end position the voltage changes polarity, and the head 15 is rotated backwards.

Japanese Laid-Open Patent Application No. 04-087127 is in Japanese, for which an English language "Patent Abstracts of Japan" is attached, and as presently understood by the undersigned, discloses a changeover switch. This consists of a pair of lead switches fitted in parallel to a frame at a movement conversion mechanism within a housing, a pair of magnets fitted to the inner surface side of a handle by means of a fitting frame, a resistance connected with the switch in parallel, and a resistance connected with the switch in series. The discloses magnet is understood to be for controlling velocity of rotation.

Japanese Laid-Open Patent Application No. 04-269906 is in Japanese, for which an English language "Patent Abstracts of Japan" is attached, and as presently understood by the undersigned, discloses an electric toothbrush. Contact portions electrically connecting the motor and the chargeable battery are provided between the main body and the attachment while providing a chargeable battery in the attachment.

Japanese Laid-Open Patent Application No. 08-000358 is in Japanese, for which an English language "Patent Abstracts of Japan" is attached, and as presently understood by the undersigned, discloses an electric toothbrush to provide a structure for actuating a motor switch by using a pressing force required for pushing a brush against teeth.

Japanese Laid-Open Patent Application No. 08-275961 is in Japanese, for which an English language "Patent Abstracts of Japan" is attached, and as presently understood by the undersigned, discloses an electric toothbrush to dispense with a special switch operation and improve the usability by providing such a constitution that a handle electrode makes contact with a hand when the handle part is held by the hand at tooth brushing, and an oral electrode provided near the brush part inserted in to the mouth also makes contact with the body fluid, whereby a driving circuit is formed to drive a motor.

German Utility Model GbM 296 08 164 is in German, and as presently understood by the undersigned, discloses an electric toothbrush that generates reciprocating motion using electromagnets B, B.a. to B.d.

For each of Japanese Patents 5-269024; 8-117030; and 11-318951, an English-language Patent Abstracts of Japan is attached as well as a computer-generated translation generated by the publicly-available internet site of the Japanese Patent Office.

German DE 45 05 013 A1 (Müller) is in the German language, and a Derwent English language abstract is enclosed. Examiner's attention is drawn to the disclosure, as presently understood by the undersigned, in the concluding paragraph of the specification, at column 5, lines 7-15, that in addition to the depicted embodiment, the housing 1 can be configured as a hand grip piece directly, which has a coupling device for the toothbrush 5, and that thereby the toothbrush 5 can be one-piece and releasably connected to the hand grip, or the toothbrush can be a multi-component article with a removable bristle head, whereby in that situation only the grip portion of the toothbrush 5 is formed with the housing/handpiece.

Respectfully submitted,



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September 5, 2002

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Atty. Docket No. B06506

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Hilscher et al.

) Examiner: Chin, R.

Serial Number: 09/811,080

) Group Art Unit: 1744

Filed: March 16, 2001

) For: Dental Cleaning Device

Assistant Commissioner for Patents
Washington, DC 20231

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TC 1700

INFORMATION DISCLOSURE STATEMENT

Applicants have submitted herewith for the Examiner's consideration copies of the references identified in the attached form PTO-1449. Applicants respectfully request that the Examiner carefully review all of the submitted references and kindly make them of record by initialing the PTO-1449. This submission is made in good faith to comply with the obligation to disclose material information under 37 C.F.R. §1.56 and should not be construed as an admission that the references submitted are relevant or are prior art.

In U.S. Pat. 3,220,039 (Dayton), reference is made to the disclosure at col. 4, lines 18-53, of an embodiment of a mounting arrangement, alternate to the depicted interlocking fingers, between the removable brush unit 11 and the handle unit 10 that uses a bayonet connection, hinged clips, or "permanent magnets embedded in the cooperating cover plates of the respective units".

German Patent 28 26 008 C2, published June 16, 1983, discloses a toothbrush whose switch can be actuated when the plastic ring 4 which carries a magnet is present on the housing; if the ring is slipped off the housing, such as for travel, the switch cannot be actuated, as demonstrated in a product on sale in the United States described in the Use Instructions to the Braun D5 (Type 4726) Plak Control toothbrush, see section at page 10 "When Traveling" describing the switch labeled "Travel Lock" shown in figure F, made of record herewith.

Certific

Certificate of First Class Mailing under §1.08

I hereby certify that this paper and those referenced herein are being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, DC 20231 on the date shown below.

Alma Woodberry
Signed

Alma Woodberry
Printed Name

9-10-02
Date

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PTO FORM 1449

INFORMATION DISCLOSURE CITATION

DOCKET NO.: B06506

APPLICANT: Hilscher et al.
SERIAL NO.: 09/811,080
FILING DATE: March 16, 2001

SHEET 1 OF 5

GROUP: 1744

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA	3,220,039	30/11/65	Dayton et al.	15	28	30/07/63
	AB	3,571,544	23/03/71	Sheehan	200	157	21/10/68
	AC	3,802,420	09/04/74	Gordon et al.	128	56	26/06/72
	AD	4,413,199	01/11/83	Fischer	310	50	01/02/80
	AE	4,506,400	26/05/85	Klein	15	22	30/11/83
	AF	4,595,850	17/06/86	Woog	310	47	25/10/84
	AG	5,099,536	31/03/92	Hirabayashi	15	28	03/04/89
	AH	5,341,534	30/08/94	Serbinski et al.	15	22.1	21/06/93
	AI	5,381,576	17/01/95	Hwang	15	22.1	17/03/94
	AJ	6,227,853	08/05/01	Hansen et al.	433	119	16/07/99:

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATE
	AK	2124686 ✓	16/12/92	China	A61C	17/26	
	AL	2149877 ✓	22/12/93	China	A61C	17/26	
	AM	2332378	11/8/99	China	A61C	17/032	
	AN	2048697 ✓	06/12/89	China	A46B	13/02	
	AO	749380 ✓	28/07/80	Russia	A46B	13/00	
	AP	1542539 ✓	15/02/90	Russia	A46B	13/08	
	AQ	1674789 ✓	07/09/91	Russia	A46B	13/04	

OTHER PUBLICATIONS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

AR	Use instructions to Braun D5 electric toothbrush Type 4726 on sale in United States, circa 1991 (3 sheets-cover and pp. 8-11) including description of "Travel lock" switch.
AS	PCT Search Report in corresponding PCT/EP01/02844 dated 1 August 2001
AT	

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	BA	4,365,376	28/12/82	Oda et al.	15	22	13/03/80
	BB	5,263,218	23/11/93	Giuliani et al.	15	22.1	25/02/93
	BC	4,914,376	03/04/90	Meyer	323	352	30/03/88
	BD	6,202,242	20/03/01	Salmon et al.	15	22.1	04/08/99
	BE	4,371,118	01/02/83	Sontheimer et al.	241	30	02/06/80
	BF	3,782,799	01/01/74	Hansen	312	206	10/08/72
	BG	5,974,615	11/2/99	Schwarz-Hartmann et al.			
	BH	4,156,620	5/29/79	Clemens	134	6	5/27/77
	BI	4,827,550	5/9/1989	Graham et al.	15	22	5/4/1988

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATE
	BK	08-117030 ✓	14/05/96	Japan	A46B	13/02	Abs.
	BL	08-275961 ✓	22/10/96	Japan	A61C	17/22	Abs.
	BM	08-000358 ✓	09/01/96	Japan	A46B	13/02	Abs.
	BN	05-269024 ✓	19/10/93	Japan	A46B	13/02	Abs.

OTHER PUBLICATIONS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

	BO	Color photographs of Bausch & Lomb "Interplak" Model PB-4B style Handpiece with travel protection switch and Toothbrush attachment (handpiece stamped "1D 1A", believed circa 1992 on sale in the United States) (7 views).
	BP	Package rear and bottom panels of Bausch & Lomb Interplak Model PB-4B, marked © 1990 (color copy, 1 sheet).
	BQ	Product use instructions to Bausch & Lomb Interplak travel-style "Voyager" model TK-2 marked © 1991 (6 photocopied sheets containing cover and pages 1-10).
	BR	Color photographs of Bausch & Lomb "Interplak" Model PB-6 style Handpiece with waterproof electronic travel protection switch (believed circa 1992 on sale in the United States) (6 views).
	BS	Package rear and bottom panels of Bausch & Lomb Interplak Model PB-6, marked © 1992 (color copy, 1 sheet).

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	DA	5,561,881	08/10/96	Klinger et al.	15	22.1	22/03/95
	DB	5,184,959	09/02/93	Oryhon et al.	434	263	30/09/91
	DC	5,943,723	31/08/99	Hilfinger et al.	15	22.1	28/04/98
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FOREIGN PATENT DOCUMENTS

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	DJ	04-269906 ✓	25/09/92	Japan	A46B	13/02	Abs.
	DK	04-087127 ✓	19/03/92	Japan	H01H	36/00	Abs.
	DL	29608164 ✓	04/05/96	Germany	A61C	17/22	
	DM	0046169 ✓	22/08/84	Europe	A47J	43/046	Abs.
	DN	2082713 ✓	10/03/82	United Kingdom	F16P	3/08	
	DO	0440051 ✓	07/08/91	Europe	A47J	42/56	Abs.
	DP	2413524 ✓	02/10/75	Germany	F16P	3/08	Abs.
	DQ	19921677 ✓	23/11/00	Germany	G01R	31/02	Abs.
	DR	0024992 ✓	27/06/84	Europe	A47J	43/046	Abs.

OTHER PUBLICATIONS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

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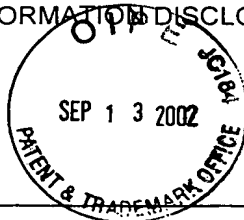
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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATE
	EL	0285915 ✓	12/10/88	Europe	H03K	17/97	Abs.
	EM	19832607 ✓	18/05/00	Germany	A47K	1/09	
	EN	4305013 ✓	25/8/94	Germany	A61C	17/00	Abs.
	EO	4036479 ✓	21/5/92	Germany	H02J	7/00	Abs.
	EP	2826008 C2 ✓	6/16/83	Germany	H01H	36/00	Abs.
	EQ	4422086 C1 ✓	24/06/94	Germany	A47J	43/08	Abs.
	ER	19627752 A1 ✓	07/10/96	Germany	A61C	17/34	

OTHER PUBLICATIONS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

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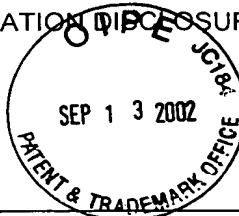
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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATE	
	FL	WO9724079 ✓	10/07/97	International Appl.	A61C	17/22		
	FM	WO9855274 ✓	10/12/98	International Appl.	B26B	21/44		
	FN	11-318951 ✓	24/11/99	Japan	A61C	17/22	Abs.	
	FO	WO 00/47128 ✓	8/17/00	PCT	A61C	17/16		
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OTHER PUBLICATIONS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)								
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